

CLAIM AMENDMENTS

Please cancel Claims 14 and 20-24, amend Claims 16 and 17-19, and add new Claims 25 and 26 as follows:

1. (Withdrawn) A method of operating a solid-state image sensing apparatus having pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge generated by said photoelectric conversion element, and a transfer switch for controlling connection between said photoelectric conversion element and the gate of said field effect transistor, wherein

transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor is performed under a condition that a channel is formed under the gate of said field effect transistor.
2. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said field effect transistor is operated in a triode region during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.
3. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said field effect transistor is operated under a condition that a gate voltage of said field effect transistor is greater than a sum of a source voltage and a threshold voltage of said field effect transistor during the transference of the

photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

4. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said field effect transistor is operated under a condition that a gate voltage of said field effect transistor is greater than a sum of a drain voltage and a threshold voltage of said field effect transistor during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

5. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a selection switch for controlling connection between a drain of said field effect transistor and a fixed voltage source, wherein

said selection switch is controlled to be off during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

6. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a selection switch for controlling connection between a source of said field effect transistor and an output line, wherein

said selection switch is controlled to be on during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

7. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a source of fixed current for providing current to a source of said field effect transistor, wherein

the source of said field effect transistor and said source of fixed current is connected during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

8. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a fixed voltage source for applying a source of said field effect transistor, and a switch arranged between the source of said field effect transistor and said fixed voltage source, wherein

the source of said field effect transistor and said fixed voltage source is connected during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

9. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said photoelectric conversion element is a

photodiode, and said photodiode is depleted after the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

10. (Withdrawn) A solid-state image sensing apparatus comprising:
a plurality of pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge generated by said photoelectric conversion element, and a transfer switch for controlling connection between said photoelectric conversion element and the gate of said field effect transistor; and
control means for controlling that transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor is performed under a condition that a channel is formed under the gate of said field effect transistor.

11. (Withdrawn) The solid-state image sensing apparatus according to claim 10, wherein said control means controls said field effect transistor to operate in a triode region during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

12. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 10, wherein said control means controls said field effect transistor to operate under a condition that a gate voltage of said field effect transistor is greater than a sum of a source voltage and a threshold voltage of said field effect transistor

during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

13. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 10, wherein said control means controls said field effect transistor to operate under a condition that a gate voltage of said field effect transistor is greater than a sum of a drain voltage and a threshold voltage of said field effect transistor during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

14. (Cancelled)

15. (Cancelled)

16. (Currently Amended) ~~The~~ A solid-state image sensing apparatus according to claim 14, each pixel further comprising:

a plurality of pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge signals generated by said photoelectric conversion element, a first switch adapted to control a connection between said photoelectric conversion element and the gate of said field effect transistor, and a first reset circuit adapted to reset the gate of said field effect transistor;

output lines adapted to transfer respective outputs from said field effect transistors;

loads provided on said output lines for said field effect transistors;
second reset circuits adapted to reset said output lines to a
predetermined voltage not equal to ground voltage;
driving circuits adapted to reset said output lines, to transfer to said
output lines said first signals obtained from said field effect transistors by resetting the
gates of said field effect transistors, to turn on said first switches and reset said output lines
while transferring said photo-charge signals to the gates of said field effect transistors, and
then to transfer second signals from said field effect transistors to said output lines;
a first capacitor adapted to store temporarily an output from said
field effect transistor transferred to a respective said output line; and
a second switch ~~for controlling~~ adapted to control transference of the
output from said output line to said first capacitor.

17. (Currently Amended) ~~The~~ A solid-state image sensing apparatus
according to claim 14, each pixel further comprising:
a plurality of pixels each including a photoelectric conversion
element, a field effect transistor whose gate receives photo-charge signals generated by said
photoelectric conversion element, a first switch adapted to control a connection between
said photoelectric conversion element and the gate of said field effect transistor, and a first
reset circuit adapted to reset the gate of said field effect transistor;
output lines adapted to transfer respective outputs from said field
effect transistors;
loads provided on said output lines for said field effect transistors;

second reset circuits adapted to reset said output lines to a predetermined voltage not equal to ground voltage;

driving circuits adapted to reset said output lines, to transfer to said output lines said first signals obtained from said field effect transistors by resetting the gates of said field effect transistors, to turn on said first switches and reset said output lines while transferring said photo-charge signals to the gates of said field effect transistors, and then to transfer second signals from said field effect transistors to said output lines;

a first capacitor adapted to store temporarily the first signal transferred to each of said output lines;

a second switch adapted to control transference to said first capacitor;

a second capacitor adapted to store temporarily the second signal transferred to each of said output lines; and

a third switch adapted to control transference to said second capacitor.

18. (Currently Amended) The solid-state image sensing apparatus according to claim ~~14~~ 16, each pixel further comprising a fourth switch, arranged between said field effect transistor and a power supply, adapted to select a row.

19. (Currently Amended) The solid-state image sensing apparatus according to claim ~~14~~ 16, each pixel further comprising a fourth switch, arranged between said field effect transistor and said output line, adapted to select a row.

20.-24. (Cancelled)

25. (New) The solid-state image sensing apparatus according to claim 17, each pixel further comprising a fourth switch, arranged between said field effect transistor and a power supply, adapted to select a row.

26. (New) The solid-state image sensing apparatus according to claim 17, each pixel further comprising a fourth switch, arranged between said field effect transistor and said output line, adapted to select a row.